Remarks:

1. General Remarks and Summary of the Applicant's Invention

The Applicant would like to thank the Examiner for carefully reviewing the specification and claims. The Applicant particularly appreciates that claims 16-26 and 28-30 were found to recite allowable subject matter. Please reconsider the application in view of the above amendments and the following remarks.

The Applicant's invention generally includes a system, a method and an apparatus for retrieving cable from the water during marine operations. The invention is especially advantageous for use with floating vessels. The invention may also be used for deploying cable in marine operations.

According to the method of the invention, the retrieval of the cable is conducted while monitoring and adjusting the pulling forces on the cable so as to reduce or prevent damage to the cable from such pulling forces during the retrieval. A pulling device that distributes the pulling forces and stresses among the cable components is used to pull the cable for its retrieval. The pulling device may employ a see-saw action, that is, a pulling and playing back of the cable, to maintain the pulling forces below the damage point for the cable.

A preferred embodiment of a system according to the invention includes a pulling drum capable of pulling the cable by wrapping the cable around the drum, thereby distributing pulling forces across the components of the cable. The pulling drum may be powered by a drive motor with a regulatable-torque driver element for adjusting the forces on the cable. Alternatively, the drum may be powered by a clutching system or by a hydraulic torque conversion system set to slip or stall at a selectable force value. Any means for powering the drum may preferably allow payback of the cable to lessen pulling forces on the cable if needed to avoid damage to the cable. Preferably the apparatus or system will also have a front-mounted damper arm with an adjustable tension range positioned in front of the pulling drum to dampen stress on the cable, particularly stress caused by the movement of the water.

2. Status of the Claims

Claims 1-37 are pending in the application. Claims 1, 27 and 32 are independent. Claims 11 and 12 were objected to for minor informalities. Claims 16 and 27 were rejected for including an element not having proper antecedent basis. The Applicant believes that the proposed amendments to the claims are responsive to the foregoing objections and rejections.

Claims 1-15, 27 and 31-34 were rejected as anticipated by Claassen et al., U.S. Patent No. 4,155,538 ("Claassen").

3. Claim Rejections – 35 U.S.C. § 102(b)

Rejection of claims 1-15, 27 and 31-34 is traversed for the reasons which follow. Claassen discloses a device for lowering a load from a vessel, from a spot above the water line, to a spot beneath the water line. The device disclosed in Claassen includes a winch and a cable connected with the load and moved by the winch along at least one cable pulley rotatable about a shaft. In order to keep the cable from becoming alternately slack and taut during contact of the load with the water, tension on the cable is maintained substantially constant by placing the shaft of the pulley parallel to itself and connecting it with a plunger rod of a plunger cylinder. The plunger cylinder is provided with an accumulator.

With respect to claim 1, which recites:

> A system for retrieving cable from water during marine operations employing a floating vessel, said system comprising
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> a distributor for distributing forces across components of the cable while pulling said cable and
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> an adjuster for automatically adjusting the pulling forces on the cable caused by movement of said vessel in the water.

Applicant respectfully notes the following element that is not disclosed in Claassen, namely the adjuster for automatically adjusting the pulling forces on the cable caused by movement of the vessel in the water. "Adjuster" as used in description and claims of the Applicant's invention is explained in the specification starting on page 6, in the middle of paragraph [0020], which recites, in pertinent part:

> Drive torque may be applied to the drum 10 by any available means known to those of ordinary skill in the art, such as electric motor, shown schematically in FIG. 1(c), or hydraulic, or mechanical means, for example. The cable tension may be monitored by monitoring the position of the

> damper arm or the drive power applied to the drum, **and the drive torque applied to the drum 10 regulated in response to the measured tension to control the force on the cable 20. Alternatively, the drive torque may be regulated or adjusted through a clutching system or hydraulic torque conversion system 59,** shown schematically in FIG. 1(c), that may be set to slip or stall at a selected force value (i.e., an amount of force that should preferably not be exceeded to ensure no damage to the cable, most preferably with a margin for error built into the value). As shown in FIG. 1(c), clutching or hydraulic conversion system 59 comprises motor 54 which applies power to drum 10 through clutch or torque converter 56. The drive torque may be set to stall at a selected force by drive torque control 58. **In either case, if the tension or force on the cable 20 continues to exceed the selected force amount, the drive torque means will stall so that drum 10 will initially discontinue forward rotation, and if stalling is not sufficient to prevent further increases in the tension on the cable, the system will allow drum 10 to rotate in the reverse direction, and the cable 20 to pay back out to lessen the tension or force on the cable 20**. As the extreme tensions relax, the system will resume retrieval of the cable, i.e., the drum 10 will resume forward rotation. The swing of the damper arm also functions to limit tension. In very high wave action, the alternate pulling in and playing out of the cable according to the invention to prevent the maximum applied tensions from being exceeded can produce a "see-saw" action.

[emphasis added]. The section of paragraph [0020] shown above and highlighted indicates that the adjuster as contemplated by the Applicant is a device that regulates and limits the amount of drive force applied by the winch drum to the cable being payed out or retrieved. Claassen shows a device which enables limited lengthening and shortening of the cable (the cylinder/piston compensated pulley shaft), which does enable some regulation of the tension on the cable in response to movement of the vessel and/or load in the water. However, Claassen does not show or suggest any mechanism to control the amount of drive torque applied to the winch drum. Further, Claassen shows no embodiment of winch drum control as stated by the Applicant which includes the feature of rotating the drum during cable retrieval in a reverse direction in the event vessel and cable movement results in increasing tension on the cable. As may be readily inferred by review of the compensation device shown in Claassen, once the piston has reached the end of its travel in the cylinder, no further tension compensation is possible. At that point in operating the system shown in Claassen, if drive force continues to be applied to the cable, then the cable can be broken when tension exceeds the breaking strength of the cable. In addition, Applicant discloses and claims a separate and distinct element which can perform a function similar to the piston compensator device shown in Claassen. Such device in the Applicant's invention is the damper arm, or dampener as recited in claim 11. The damper arm is shown in Applicant's Figure 1(a) and 1(b) as element 30. The damper arm is suspended between two shock absorbers 26, 34 to be maintained in a selected neutral position, and can be moved to pivot about point 32 when changes in tension on the cable occur. Note that the function of the damper arm is separate and distinct from the adjuster described in paragraph [0020]. Note also that the damper arm has limits of travel, and accordingly, limits of the degree of tension compensation that it can apply to the cable, just as the compensator shown in Claassen. Accordingly, "adjuster" as used in connection with the Applicant's claimed invention is a separate and distinct element not shown or fairly implied in Claassen. Therefore, Claassen cannot anticipate claim 1.

Claims 2-26 ultimately depend from claim 1, and are thus patentable over Claassen for at least the same reasons advanced with respect to claim 1.

Claim 27 recites a method for

> retrieving cable from water in marine operations employing a floating vessel, while monitoring and adjusting the pulling forces on said cable during said retrieval to reduce damage to said cable from said forces during said retrieval, said method comprising pulling said cable with a pulling device that distributes pulling forces and stresses among all of the cable components, **and that employs a see-saw action for adjusting said pulling forces** to maintain said forces below the damage point for said cable.

[emphasis added]. Applicant notes that the term "see-saw action" as recited in claim 27 is defined in the Applicant's specification is defined in the last sentence of paragraph [0020], cited above with reference to claim 1. See-saw action is defined as alternate paying out and reeling in of the cable during retrieval when the tension applied to the cable exceeds a safe level. The paying out of the cable is intended to reduce the tension on the cable to below the safety threshold. Claassen, as explained above with reference to claim 1, includes a compensated tensioned which maintains the tension on the cable at a substantially constant value, and, when fully compressed, cannot further compensate to maintain the tension at the constant value. Further, there is no functionality built into the compensator shown in Claassen which can reduce the tension on the cable below the safety threshold should the tension rise above the threshold. Consequently, nothing in Claassen performs the function of adjusting the pulling force on the cable in a see-saw action as defined by the Applicant and as recited in claim 27. Accordingly, claim 27 cannot be anticipated by Claassen.

Claims 28-31 ultimately depend from claim 27 and are patentable for at least the same reasons advanced with respect to claim 27. Claim 32 recites a system for retrieving a cable from a body of water that includes, at least, "powered drive motor with regulatable torque drive for operating the pulling drum and adjusting the forces such pulling exerts on the cable." The regulatable torque drive for operating the pulling drum and adjusting the forces the pulling exerts on the cable were explained above with reference to claim 1, and as therein explained, no device shown in Claassen performs a corresponding function to the regulatable torque drive recited in claim 32. Accordingly, claim 32 cannot be anticipated by Claassen.

Claims 33-37 ultimately depend from claim 32 and are patentable over Claassen for at least the same reasons advanced with respect to claim 32.

The Applicant believes that this Reply is fully responsive to each and every ground of rejection or objection cited in the Office Action of May 16, 2005, and respectfully requests early favorable action on this application.

Respectfully submitted,

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